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USSN: 10/723,389
Atty. Docket: 2003B103/2
Amendment dated August 20, 2007
Reply to OA mailed May 18, 2007

REMARKS/ARGUMENTS

Claims 51 and 72 have been amended to overcome the 35 USC 112 objection by: (a) removing the inadvertent residue language "greater than" in claim 51 from the previous amendment; and (b) properly re-inserting "Tmelt" after "greater than" in claim 72. Applicants apologize for this oversight. Withdrawal of the objection is requested.

35 USC 112 Objection To Claims 51-64 and 72

Claims 51 and 72 were previously amended to reflect that the heater not only heats the polymer to cup temperature Tmelt, but also *locally* (i.e., on the edge of the melt near the heater) heats the polymer to a temperature from about 245-372°C, which temperature is 30-170°C greater than Tmelt. Typographical errors appear in the previous submission which is now corrected to overcome the objection. Withdrawal of the objection is respectfully requested.

35USC102 Rejection Of Claims

Claims 36-39, 51-53, 56, and 72 were rejected as anticipated by Hiromi et al. JP Patent No. 58-217327 ("Hiromi"). The Office Action indicates that Hiromi provides all of the features of the independent claims including heaters 2 and 4 proximate the downstream face of an extrusion apparatus. Applicants respectfully traverse because the Hiromi specification and drawings merely suggest Centigrade temperature ranges indicating a consistent Tmelt temperature typical of extrusions, in this case for a particular polymer, and does not teach or suggest localized heating of a portion of the polymer exiting the extrusion device.

The Hiromi drawings suggest a large heater 2 inside and close to the extrusion path along with a small heater outside and more removed from the extrusion path. If anything, this suggests an effort to properly maintain the cup temperature of the entire extrusion; certainly it doesn't suggest increased heating on the outer edges which are known to cause the cracking problems addressed by the present invention. Furthermore, this is consistent with the repeated indication of a single temperature range for the melt as given in the Hiromi specification. There is no small number temperature differential range indicated anywhere in the Hiromi specification. Finally, the smaller heater 4 appears quite inadequate to perform a function of quickly heating an outer segment of the melt to a higher temperature.

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Hiromi at pages 1 and 2 merely suggests a typical Tmelt range for this polymer of 200-350°C, 100-350°C, and 150-280°C. It appears that temperatures appearing later in the text address MFR or melt index--see the right-hand column of page 3 wherein ASTM methods are indicated.

Since Hiromi does not disclose a die plate or extrusion assembly having a heater capable of locally heating the melt to a higher temperature than the Tmelt, as indicated in the independent claims, that element of the claims is missing. Reconsideration and withdrawal of the rejection is respectfully requested.

35USC103(a) Rejection Of Claims

Claims 36-46, 51-61, and 72 were rejected as unpatentable over Leffew et al. US 6,409,491 ("Leffew") because Leffew discloses all elements of the die plate and extrusion die assembly with a heater capable of heating the melt flow to a temperature within the claimed range, the claimed range being a matter of choice and not imparting patentability to the apparatus claim. Applicants respectfully traverse this rejection because, while not taking issue with the legal principle cited, Leffew does not disclose the apparatus element of a heater capable of and positioned so as to heat only locally, a portion of the melted polymer to the recited range above the Tmelt or cup temperature of the polymer mass, while the balance of the mass remains at Tmelt.

Leffew is concerned with reheating solidified low molecular weight polymer prior to extrusion from a barrel. Leffew is directed to a die plate assembly wherein multiple extrusion barrels are equipped with thermocouples to sense temperature drop below the liquid state, a controller to transmit the determination of solids temperature range from the thermocouples, and a heater that reheats the solid polymer in the indicated barrel back to the liquid state. See Leffew at column 3, lines 8-16 ("thereby melting the polymer").

Accordingly, Leffew does not provide a heating means for raising a local area of the polymer flow to a temperature above Tmelt, or "30-170°C" above Tmelt. There is no indication in Leffew whether the heaters could heat the polymer beyond Tmelt or whether local heating in each barrel can be accomplished. Reconsideration and withdrawal of the rejection in view of the lack of even a suggestion of a heater to locally heat the polymer flow above Tmelt, is

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respectfully requested.

Claims 47-50, and 62-64 were rejected as unpatentable over Leffew in view of Dudley U.S. Patent No. 4,123,207 ("Dudley"). Dudley, as given in the previous response does not provide the heating means for locally raising the polymer flow above Tmelt. Accordingly, even assuming *arguendo* that the combination of Dudley with Leffew is otherwise correct, none of the references disclose or suggest the apparatus heating element of the invention for locally raising the polymer flow to a temperature above Tmelt or, specifically, 30-170°C above Tmelt.

Withdrawal of the rejections and allowance of the claims is respectfully submitted.

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CONCLUSIONS


Having demonstrated that the cited reference fails to disclose or suggest the invention as claimed, and all other formal issues having now been fully addressed, this application is believed to be in condition for allowance. Accordingly, Applicant requests early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2003B103/2).

Respectfully submitted,

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